

## 780 CMR 51.00: MASSACHUSETTS RESIDENTIAL CODE

**5101.1 Scope.** The provisions of 780 CMR 51.00 shall be known as the Massachusetts Residential Code and are comprised of the *International Residential Code 2009* (IRC) with Massachusetts amendments. The Massachusetts amendments to the IRC are:

. . .

**N1101.2 and N1101.2.1** Replace as follows:

**N1101.2 Compliance.** Climate zone 5A shall be used for municipalities in MA. Compliance to this chapter shall be demonstrated by, either:

1. Meeting the requirements of the *International Energy Conservation Code 2009* or;
2. Compliance with Sections N1101, N1102.4, N1102.5, N1103.1, N1103.2.2, N1103.2.3, and N1103.3 to N1103.9 and either:
  - a. Sections N1102.1 through N1102.3, N1103.2.1 and N1104.1 or
  - b. Section 405 of the *International Energy Conservation Code 2009* and these Massachusetts amendments:

**405.6.2.1** Add subsection:

**405.6.2.1 Approved Calculation Software Tools.** Software tools meeting the requirements of Subsection 405.6 are:

1. **REScheck**: found at <http://www.energycodes.gov/>

**405.7** Add subsections:

**405.7 Approved Alternative Energy Performance Methods.** In addition to the IECC performance compliance path detailed in subsections 405.1 to 405.5 the following rating threshold criteria of this section are sufficient to demonstrate energy code compliance under section 405 without calculation of a standard reference design.

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780 CMR: STATE BOARD OF BUILDING REGULATIONS AND STANDARDS  
51.00: continued

1. **RESNET Approved Software for the Home Energy Rating System (HERS).** Where the HERS rater verified index on the building is 75 or fewer points for the finished building together with a completed and HERS rater verified ENERGY STAR Thermal Enclosure Checklist. The *mandatory provisions* of subsection 401.2 apply.

2. **Passive House Institute US (PHIUS) Approved Software: Passive House Planning Package (PHPP).** Where the Specific Space Heat Demand as modeled in Passive House Planning Package (PHPP) by a Certified Passive House Consultant is less than or equal to 20 KBtu/sq ft/year. The *mandatory provisions* of subsection 401.2 apply.

**405.7.1 Documentation.** The following documentation is required for energy code compliance under subsection 405.7:

1. For HERS compliance, a compliance report which includes a proposed HERS index of 75 or lower, a description of the building's energy features,

and a statement that the rating index is “based on plans” will be required for issuance of a building *permit*. A copy of the final certificate indicating that the HERS rater verified index is 75 or less for the finished building together with a completed HERS rater verified ENERGY STAR Thermal Enclosure Checklist is to be submitted to the *building official* before the certificate of occupancy is issued.

2. For Passive House Planning Package (PHPP) verified compliance, a compliance features, and a statement that the estimated Specific Space Heat Demand is “based on plans” will be required for issuance of a building *permit*. A copy of the final PHPP report indicating the finished building achieves a Certified Passive House Consultant verified Specific Space Heat Demand of less than or equal to 20 KBTus/sq ft/year shall be submitted to the *building official* before the certificate of occupancy is issued.

**N1101.2.1 Interior Design Conditions.** The interior design temperatures used for heating and cooling load calculations shall be a maximum of 72°F (22°C) for heating and minimum of 74°F (24°C) for cooling.

**N1101.2** Replace as follows:

**N1101.2 Compliance.** Compliance shall be demonstrated by meeting the requirements of the *International Energy Conservation Code 2012* with these Massachusetts amendments:

**R403.5 Mechanical ventilation (Mandatory).** Replace as follows:

Where the air infiltration rate in a dwelling unit is less than 5 air changes per hour when tested with a blower door at a pressure of 0.2-inch water column (50 Pa) in accordance with Section R402.4.1.2, the breathing zone of the dwelling unit shall be ventilated by mechanical means with outside air at a rate of 0.35 ACH but not less than 15 cfm/person, or with other approved means of ventilation; including the *International Mechanical Code 2009*, Section 403, or ASHRAE standard 62 as applicable. Ventilation systems shall be balanced by an *approved* method.

**R405.6.2.1** Add subsection:

**405.6.2.1 Approved Calculation Software Tools.** Software tools meeting the requirements of subsection 405.6 are:

1. **REScheck:** found at <http://www.energycodes.gov/>
2. **REM/Rate:** found at <http://www.archenergy.com/products/remrate>

**R405.7** Add subsections:

**R405.7 Approved Alternative Energy Performance Methods.** In addition to the IECC performance compliance path detailed in subsections R405.1 to R405.6 the following rating threshold criteria of this section are sufficient to demonstrate energy code compliance under section R405 without calculation of a standard reference design.

1. **RESNET Approved Software for the Home Energy Rating System (HERS).**

Where the HERS rater verified index on the building is 65 or fewer points for the finished building, before renewable energy systems are credited, together with a completed and HERS rater verified ENERGY STAR Thermal Enclosure Checklist. The *mandatory provisions* of subsection R401.2 apply.

**2. Passive House Institute US (PHIUS) Approved Software: Passive House Planning Package (PHPP).** Where the Specific Space Heat Demand as modeled in Passive House Planning Package (PHPP) by a Certified Passive House Consultant is less than or equal to 16 KBtu/sq ft/year. The *mandatory provisions* of subsection 401.2 apply.

**405.7.1 Documentation.** The following documentation is required for energy code compliance under subsection 405.7:

1. For HERS compliance, a compliance report which includes a proposed HERS index of 65 or lower, a description of the building's energy features, and a statement that the rating index is "based on plans" will be required for issuance of a building *permit*. A copy of the final certificate indicating that the HERS rater verified index is 65 or less for the finished building together with a completed HERS rater verified ENERGY STAR Thermal Enclosure Checklist is to be submitted to the *building official* before the certificate of occupancy is issued.

The certificate required in Section R401.3 will list the HERS index rating of the dwelling or dwelling unit.

2. For Passive House Planning Package (PHPP) verified compliance, a list of compliance features, and a statement that the estimated Specific Space Heat Demand is "based on plans" will be required for issuance of a building *permit*. A copy of the final PHPP report indicating the finished building achieves a Certified Passive House Consultant-verified Specific Space Heat Demand of less than or equal to 16 KBtus/sq ft/year shall be submitted to the *building official* before the certificate of occupancy is issued. The interior design temperatures used for heating and cooling load calculations shall be a maximum of 72°F (22°C) for heating and minimum of 74°F (23°C) for cooling.

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**Table N1102.2.1** In the Climate Zone 5 row, replace the value '.060' with '.057'.

**N1102.2.2** Replace the second sentence as follows: "This reduction of insulation from the requirements of

Section N1102.1 shall be limited to 500 square feet (46 m<sup>2</sup>) or 20% of the total insulated ceiling area,

whichever is less."

**Table N1102.2.1** To the criteria of the first row of the table add 'Air permeable insulation is inside of an air

barrier' and to the criteria of the fifth row of the table replace 'floor' with 'insulation'

**N1102.5** Add subsection:

**N1102.5 Maximum Fenestration U-factor and SHGC.** The area weighted average maximum fenestration U-factor permitted using trade-offs from Subsection N1102.1.3 or N1105 shall be 0.48.

**N1103.8.3** Add an exception as follows:

**Exception.** Pool covers deriving over 60% of the energy for heating from site recovered energy or solar energy source.

**N1101.3 thru 1104.1 Delete all.**